

IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1. (currently amended)An information providing method on a communication network including a server for providing a service, a gateway apparatus and a mobile packet communication network accommodating mobile terminal and including a service management node for managing management information of the service to be provided to the mobile terminal in the mobile packet communication network, the gateway apparatus being capable of communicating with said mobile terminal, said server and said service management node, the method comprising the steps of:

making a request to set management information from said service management node to said gateway apparatus, in an execution process of a procedure for accommodating the mobile terminal to said mobile packet communication network;

registering management information including a service identifier of the service to be provided to said mobile terminal into a management table by said gateway apparatus in response to reception of said request;

checking whether a service request has been sent from the mobile terminal to said server with respect to the service corresponding to the service identifier by said gateway apparatus; and

generating, by said gateway apparatus, the service request and sending the service request to the server, if the service request has not been

sent from the mobile terminal by said gateway apparatus to said server to start the service.

2. (previously presented) The information providing method according to claim 1, wherein said service management node requests said gateway apparatus to set said management information designating at least an address of said mobile terminal and the identifier of the service to be provided, and

wherein said gateway apparatus registers said management information including the information designated by said request and attribute information regarding said mobile terminal obtained from other server, into said management table.

3. (previously presented) The information providing method according to claim 1, wherein when a packet including service information is received from said server, said gateway apparatus refers to said management table and transfers said received packet to said mobile packet communication network by using the address of said mobile terminal registered as a part of the management information as a destination.

4. (previously presented) The information providing method according to claim 1, wherein said gateway apparatus has: a first management table for storing, in correspondence with each service identifier, an address of said server, and status information indicative of whether the

service request has been issued or not; and a second management table for storing management information regarding said mobile terminal, and

wherein when a packet including the service information is received from said server, said gateway apparatus specifies a service identifier corresponding to said received packet with reference to said first management table, searches said second management table for management information including said service identifier to thereby specify an address of the mobile terminal to which said received packet is to be transferred, and transfers said received packet or a duplicate of said received packet to the address of the mobile terminal.

5. (previously presented) The information providing method according to claim 4, wherein a filtering condition is designated in correspondence with a specific service identifier in said first management table, and

wherein when a packet including service information is received from said server, in the case where a filtering condition is designated in correspondence with the service identifier, said gateway apparatus uses the address of the mobile terminal as a destination of said received packet, if the management information of the mobile terminal satisfies said filtering condition.

6. (previously presented) The information providing method according to claim 4, wherein said second management table permits

registration of a plurality of service identifiers with respect to the mobile terminal.

7. (previously presented) The information providing method according to claim 3, wherein said gateway apparatus converts the destination address of the packet received from said server from a global IP address to a local IP address, and transfers the resultant to said mobile packet communication network.

8. (currently amended) An information providing method on a communication network including a server for providing a service, a gateway apparatus and a mobile packet communication network accommodating a mobile terminal and including a service management node for managing management information of the service to be provided to the mobile terminal in the mobile packet communication network, said gateway apparatus being communicable with said mobile terminal, said server and said service management node, the method comprising the steps of:

making a request to set management information from said service management node to said gateway apparatus by designating a mobile terminal address and a service identifier of the service to be provided to said mobile terminal at the time of registering location of the mobile terminal in said mobile packet communication network; and

registering the management information regarding said mobile terminal into a management table by said gateway apparatus having received said request;

checking by said gateway apparatus whether a service request has been sent from the mobile terminal to said server with respect to the service to be provided to said mobile terminal; and

when the service request for the mobile terminal has not been sent from the mobile terminal, generating, by said gateway apparatus, the request and sending the request ~~by said gateway apparatus~~ to said server to start the service.

9. (previously presented) The information providing method according to claim 8, wherein when said gateway apparatus registers the management information regarding the mobile terminal into a management table, location information obtained from a location information server for managing geographical local information of the mobile terminal in said mobile packet communication network is registered as a part of the management information into said management table, and

wherein when a packet designating a delivery area is received from said server, said gateway apparatus refers to said management table to select an address of a mobile terminal to which said received packet is to be delivered among a group of mobile terminals of which present location is in said designated area, and transfers said received packet to said mobile packet communication network by using said address as a destination address.

10. (currently amended) A gateway apparatus communicable with a server for providing a service and a mobile packet communication network

accommodating a mobile terminal and accommodating a service management node for managing information of the service to be provided to the mobile terminal in the mobile packet communication network, comprising:

means for registering management information regarding said mobile terminal into a management table when a setting request of the management information is received from said service management node, and if a service request of the service for said mobile terminal has not been sent from the mobile terminal to said server, generating, by said gateway apparatus, the service request and sending the service request to said server to start the service; and

packet transferring means for specifying, when a packet including service information is received from said server, an address of a mobile terminal to which the service with said received packet is to be provided, based on said management table and transferring said received packet to said mobile packet communication network by using the address as a destination address.

11. (previously presented) The gateway apparatus according to claim 10, wherein said packet transferring means includes means for receiving a packet including said service information in a multicast packet format from said server and transferring the packet in a unicast packet format to the mobile terminal specified by said management table.

12. (previously presented) The gateway apparatus according to claim 10, wherein said packet transferring means includes means for

converting a destination address of a packet received from said server from a global IP address to a private IP address, and transferring the resultant packet to said mobile packet communication network.

13. (previously presented) The gateway apparatus according to claim 10, further comprising:

a first management table for storing, in correspondence with a service identifier, an address of the server for providing the service, and status information indicative of whether the request for the information service has been issued or not; and

a second management table for storing management information regarding said mobile terminal, and

wherein when a packet including the service information is received from said server, said transferring means specifies a service identifier corresponding to said received packet with reference to said first management table, searches said second management table for a management information including said service identifier to thereby specify an address of a mobile terminal to which said received packet is to be transferred, and transfers said received packet or a duplicate of said received packet to said mobile terminal address.